

REMARKS

Claim 7 has been canceled without prejudice or disclaimer. Claim 1 has been amended to differently recite the invention. Claims 1-6 are now pending.

The Examiner has rejected claims 1, 2, 3, and 7 under 35 U.S.C. § 103(a) as being unpatentable over JP 10-149796 ("JP '796") in view of JP 64-024355 ("JP '355") and has rejected claims 4-6 under 35 U.S.C. § 103(a) as being unpatentable over "JP '796" in view of JP '355 and further in view of JP 01-213953 ("JP '953").

Applicant traverses these rejections, at least because the applied JP '796 and JP '355 references do not disclose or suggest the combination of claim 1 including a cathode comprising an impregnation type or a sintering type metal substrate. In this regard, the Office Action asserts that JP '796 discloses a sealed container 5 having a gas therein, trigger probes 18, 19, and cathode and anode 11, 12 having a metal substrate with a pointed head and containing a high-melting metal substrate (tungsten), and a metal coating thereover. The Office Action appears to concede that JP '796 does not disclose the tip of the substrate as being exposed.

Applicant advises that JP '796 indicates, in paragraph [0017], for example, that "substrate 22 is made of dense tungsten." Based at least on this indication, Applicant submits that metal substrate 22 of JP '796 is not an impregnation or a sintering type metal substrate. Such substrates are inherently made of porous metal and, consequently, are not dense as is the substrate 22 of JP' 796.

Applicant further submits that JP '355 does not make up for the deficiencies in JP '796. In this regard, the Office Action asserts that JP '355 discloses a tip 10 which is exposed, and that thus it would have been obvious to leave the tip of the '796 structure exposed, "for better operation of the assembly." Nonetheless, Applicant submits that these applied references are not combinable in the manner suggested by the Examiner.

As an example, JP '796 discloses a flash lamp operating in low pressure, whereas JP '355 discloses an arc lamp (as opposed to a flash lamp) operating in high pressure. For this reason

alone, Applicant submits that JP '796 and JP '355 are not combinable in the manner being asserted.

More specifically, Applicant submits that the tip portion of JP '355 is exposed because the coating is made of tungsten carbide having a low melting point, and there is no teaching or suggestion in JP '355 of exposing the tip portion when the coating is made of some other material. In other words, the exposing of the tip is disclosed as being performed only in the situation where the coating is low melting point tungsten carbide. Thus, JP '355 does not suggest exposing the tip in the assembly of JP '796, because in that assembly the material is made of material other than low melting point tungsten carbide.

Moreover, Applicant submits that the structure of JP '796 alleged to correspond to the recited high-metal coating functions as an electron emitting source. If this coating is removed, Applicants submit, the electron emitting source of JP '796 will no longer exist. Because the combination of JP '796 and JP '355 in the manner suggested in the Office Action would effectively eliminate the electron emitting source of JP '796 (i.e., exposing the tip portion of the structure of JP '796 would cause the electron emitting source to disappear), Applicant submits that such a combination would not have been obvious.

The Examiner does not rely on JP '953 in rejecting independent claim 1. Applicant agrees that JP '953 does not make up for the aforementioned deficiencies noted in JP '796 and JP '355 in regard to claim 1.

In view of the foregoing, Applicant submits that claim 1 and its dependent claims patentably distinguish over the applied art of record, at least for the foregoing reasons. Accordingly, reconsideration and withdrawal of the pending rejections is respectfully requested.


CONCLUSION

In view of the foregoing, Applicant submits that the pending claims are in condition for allowance, and respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution. A favorable action is awaited.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'John G. Smith', written over a horizontal line.

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Dated: August 20, 2004

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